Developing Content for the Management and Organizational Practices Survey-Hospitals (MOPS-HP)

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Abstract

Nationally representative U.S. hospital data does not exist on management practices, which have been shown to be related to both clinical and financial performance using past data collected in the World Management Survey (WMS). This paper describes the U.S. Census Bureau's development of content for the Management and Organizational Practices Survey Hospitals (MOPS-HP) that is similar to data collected in the MOPS conducted for the manufacturing sector in 2010 and 2015 and the 2009 WMS. Findings from cognitive testing interviews with 18 chief nursing officers and 13 chief financial officers at 30 different hospitals across 7 states and the District of Columbia led to using industry-tested terminology, to confirming chief nursing officers as MOPS-HP respondents and their ability to provide recall data, and to eliminating questions that tested poorly. Hospital data collected in the MOPS-HP would be the first nationally representative data on management practices with queries on clinical key performance indicators, financial and hospital-wide patient care goals, addressing patient care problems, clinical team interactions and staffing, standardized clinical protocols, and incentives for medical record documentation. The MOPS-HP's purpose is not to collect COVID-19 pandemic information; however, data measuring hospital management practices prior to and during the COVID-19 pandemic are a byproduct of the survey's one-year recall period (2019 and 2020).

Keyword*:* Hospitals, Management Practices, Chief Nursing Officers, Staffing and Teams, Incentives, Protocols

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1. INTRODUCTION

This paper discusses the Census Bureau's development of content for the Management and Organizational Practices Survey-Hospitals (MOPS-HP) (see Appendix A). Dr. Raffaella Sadun, Thomas S. Murphy Associate Professor of Business Administration at Harvard Business School, worked with the Census Bureau to conduct cognitive testing on this content with funding from Ariadne Labs.[3,4] As part of the Census Bureau's statistical quality standards (U.S. Census Bureau, 2013), all but two of the 39 questions have undergone substantial cognitive testing in the form of interviews with respondents to help ensure that the questionnaires and supplemental materials support a balance between collecting high quality data and minimizing respondent burden. This paper details how the results of these interviews, during two separate rounds, helped the Census Bureau to incorporate industry-tested terminology, to word questions clearly and concisely, and to provide appropriate response options (see cognitive testing methodology in Appendix B).

The 2020 Coronavirus (COVID-19) pandemic highlights the relevance of hospital management practices. Following the completion of both rounds of cognitive testing, two questions were added to measure the coordinated movement of frontline clinical workers and for updating standardized clinical protocols.[5] With data collection for the MOPS-HP just months away, cognitive testing on this new proposed content was not feasible. To meet the Census Bureau's quality standards for new content, two independent methodological reviews by cognitive testing experts were conducted and discussed with MOPS-HP's survey managers and subject matter experts. Together agreement was reached on the best wording for these questions, which were designed to fit with existing industry-tested content on staffing allocations and standardized clinical protocols (See questions 30 and 36 in Appendix A and discussions in Section 8 and 9 below).

[3] Dr. Sadun's research can be accessed here https://www.hbs.edu/faculty/Pages/profile.aspx?facId=541712
[4] Conducting the MOPS-HP is a partnership between Harvard Business School and the Census Bureau.
[5] To help offset respondent burden, two questions were dropped from the last section in the MOPS-HP on the documentation of patients' medical records. These questions asked how often providers were trained in the documentation of patients' medical records and how long on average it took for providers to respond to queries about their documentation of patients' medical records.

This hospital survey is adapted from the MOPS that was conducted for reference years 2010 and 2015 as a joint statistical project between the Census Bureau and a group of external researchers as a supplement to the Annual Survey of Manufactures.[6] The MOPS collects data on management practices at establishments in the manufacturing sector in order to measure production inputs other than labor and materials. The survey from which the MOPS was itself originally adapted, the World Management Survey (WMS), also collected data from manufacturing, but added U.S. hospitals to its sample in 2009 (Bloom et al., 2019b). Data from hospitals in the WMS sample show that management practices are related not only to financial performance, such as higher productivity, profitability, and survival, but also to patient care quality (Bloom et al. 2019a; Bloom et al., 2019b).

Hospitals represented 32.7 percent of U.S. health expenditures in 2018, which totaled $3.6 trillion (National Center for Health Statistics), thereby motivating interest in how management practices in hospitals relate to their financial performance as well as clinical outcomes.[7] These relationships are important given our current knowledge, but also extremely relevant amid rising health care costs and increasing demand from an aging population.

Findings show that performance measures – such as heart attack survival rates and profits – differ across hospitals (Bloom et al., 2019b), but nationally representative data are not available to investigate whether and how these measures may be correlated with management practices. The MOPS-HP can help fill this data gap when analyzed in conjunction with Census-collected financial measures and external data, such as Medicare Compare on clinical outcomes and patient assessments. Similar to the data from the 2015 MOPS and the 2009 WMS, responses to the MOPS-HP questions will be used to construct management scores for studying the relationship between management practices and performance.[8] When finalizing the content for

[6] Throughout this paper, any reference to the "MOPS" refers to the surveys conducted for the manufacturing sector, while the hospital survey will always be denoted as the "MOPS-HP." The Census Bureau and the MOPS research team are currently planning a third wave of the MOPS for reference year 2021.

[7] Physicians and clinical services, prescription drugs, and nursing homes/residential settings account for 19.9, 9.2, and 4.6 percent respectively. Other health care services accounted for the remaining 33.6 percent. National Center for Health Statistics, https://www.cdc.gov/nchs/fastats/health-expenditures.htm.

[8] Bloom and others use data on management practices including performance monitoring, target setting, and performance incentives to construct ordinal scores, with the lowest score indicating no explicit, formal, or frequent use of these management practices, and the highest score reflecting intensive use or "structured management practices" (Bloom and Van Reenen, 2007). See Buffington et al. (2018) for a discussion on constructing an index using the MOPS. See Zhu et al. (2018) for a discussion on developing and evaluating a scale for management practices in hospitals.

hospitals, one objective has been to keep the wording of questions similar to those asked in manufacturing to help support comparability. We discuss relevant differences in this paper.

The MOPS-HP's content was tested in 2018 primarily with Chief Nursing Officers (CNO) and Chief Financial Officers (CFO) at thirty hospitals across seven states and the District of Columbia. The Census Bureau will conduct the 2020 MOPS-HP as a supplement to the Service Annual Survey.[9] The survey will be addressed to CNOs at general medical and surgical hospital establishments and will ask 39 questions about the hospitals' practices in both 2020 and 2019 (which we refer to as the recall period). While respondents were asked about their ability to report five-year recall data (2012 and 2017) during cognitive testing, a one-year recall period (2019 and 2020) was adopted to help mitigate any potential five-year recall issues potentially exacerbated by the COVID-19 pandemic.[10, 11, 12] Although the purpose of the MOPS-HP is not to measure hospitals' responses to the COVID-19 pandemic, and indeed most of the content was planned prior to the onset of the pandemic, the reference period of the survey makes the pandemic salient for respondents. As such, respondents may have stark recollections of the practices on either side of the one-year recall period.

Section A of the MOPS-HP includes two questions asking for the respondent's tenure at the hospital and as a manager of the sampled hospital. These questions are followed by a request for the number of licensed hospital beds in Section B and will be validated using comparable data from the American Hospital Association (AHA). Section C asks eighteen questions on management practices for monitoring performance, goals, promotions, addressing problems, and managing people, using content adapted from the MOPS (Buffington et al. 2017).[13] Section D on the MOPS-HP asks about management training. The survey's remaining questions in Sections E-H are influenced by the WMS's 2009 healthcare instrument. The WMS's healthcare instrument asks twenty-one questions on management practices including queries on the

[9] For more details on the Service Annual Survey, visit https://www.census.gov/programs-surveys/sas.html
[10] The content was tested with Chief Financial Officers (CFO) and Chief Nursing Officers (CNO), but the final survey will be sent to CNOs only since cognitive testing showed they were the best respondents. For more details on cognitive testing with CFOs, see Appendix B.
[11] Establishment refers to the physical location for business activity.
[12] A future paper will detail survey operations for the MOPS-HP.
[13] The 2015 MOPS questionnaire is available here https://www.census.gov/programs-surveys/mops/technical-documentation/questionnaires.html.

application of standardized procedures and who decides how work is allocated across clinical staff.[14]

In Section 2, this paper presents key definitions for clinical managers, providers, and frontline clinical workers (FCW). Section 3 discusses the two questions on tenure and their relevance for the reliability of collected recall data. Section 4 summarizes the testing of questions that collect measures of hospital size used for validation exercises. In Section 5, the paper provides details on cognitively testing the MOPS-HP's eighteen questions on management practices, and Section 6 discusses asking CNOs about their participation in management training. Questions on the management of team interactions and staffing decisions are discussed in sections 7 and 8, respectively. Section 9 presents the development of the content on the hospital's use of standardized clinical protocols, and Section 10 discusses the MOPS-HP's questions on documentation of patients' medical records. The paper concludes with final remarks in Section 11.

2. CLINICAL MANAGERS, PROVIDERS, AND FRONTLINE CLINICAL WORKERS

Similar to the MOPS questions on managers and non-managers, the MOPS-HP questions initially referred to managers who were defined as those involved in clinical/operational decision making and frontline clinical workers (FCW). The MOPS-HP does not include examples of managers in addition to this definition, as it is almost impossible to provide a comprehensive list and we do not want to limit the managers that respondents might consider. In contrast, the MOPS lists plant managers, human resource managers, and quality managers as examples of titles associated with managers from manufacturing. During cognitive testing for the MOPS-HP, respondents made various suggestions for defining managers and frontline clinical workers. Tables 1 and 2 show how these definitions evolved as a result of cognitive testing.

[14] The 2009 WMS's instrument for healthcare is available here https://worldmanagementsurvey.org/survey-data/methodology/ and provides multi-part open-ended questions asked of hospital managers across nine countries by telephone interviewers. The WMS instrument also guides interviewers on quantifying responses to measure the extent to which the management practices are structured.

After round 1 of testing, respondents recommended that the MOPS-HP refer to "clinical managers" rather than "managers." The questions were subsequently changed to focus more narrowly on clinical managers, defined as "those who are involved in patient care decision-making." Following further testing, the final definition in the MOPS-HP states "A CLINICAL MANAGER is someone who has employees directly reporting to them, with whom they meet on a regular basis, and whose pay and promotion they may be involved with. A clinical manager is involved in patient care decision-making."

To better capture the specific types of workers in the hospital industry, respondents were asked questions about FCWs rather than non-managers, the term used in the MOPS. FCWs were initially defined as clinical staff with non-managerial responsibilities, including physicians, staff nurses, and medical assistants. During round 1 of cognitive testing, however, the Census Bureau was advised that physicians are not considered FCWs if they are not employed by the hospital. While providing examples can potentially limit a respondent's interpretation of a survey question, a revised listing on which clinical positions should be included or excluded in the definition of FCWs was suggested by respondents. Including these examples can help to promote consistency, improve accuracy of the answers, and remind respondents of items they may have otherwise been unsure of including (Tourangeau et al, 2014). After receiving positive feedback during round 2, the following revisions were adopted – "FRONTLINE CLINICAL WORKERS include all clinical staff with direct patient care responsibilities (such as nurses, nurses' aides, physical/occupational/speech therapists, radiology and laboratory technicians), who do NOT have employees directly reporting to them. Do NOT include non-clinical frontline staff such as food services, housekeeping, or maintenance staff."

Following feedback obtained during cognitive testing that respondents considered physicians to be providers, and distinct from FCWs, an additional definition was added. Based on respondent feedback, providers are defined as "physicians, physicians' assistants, advanced practice nurses, and others responsible for evaluating, diagnosing, and treating patients." In addition, respondents frequently commented that various management practices can differ for providers and FCWs (e.g., promotions and underperformance). As a result, the final MOPS-HP asks separate questions for these two groups.

3. RESPONDENT'S TENURE AND RECALL DATA

3.1 RESPONDENT'S TENURE AT THE HOSPITAL

The first question on the MOPS-HP asks the respondent for the year when they started working at the hospital. Similarly, the MOPS asks when the manager started working at the manufacturing establishment (MFG-38).[15] The WMS also collects information about the manager at the start of the interview and asks for the number of years the respondent has worked at the hospital.

Asking this question on the MOPS-HP is key for determining whether to ask the respondent for recall data. If respondents indicate they were not at the sampled hospital in 2019, only the 2020 information will be requested to reduce respondent burden and to maximize data quality. These recall data are important to collect since they will provide not only an additional snapshot of cross-sectional variation, but also information on the longitudinal variation in management practices. The purpose of the MOPS-HP is not to collect pandemic-related data. However, the responses will support the study of how the adoption of management practices changed between the year prior to the COVID-19 pandemic and the year of its onset as a byproduct of the 2019-2020 recall period. These data will support analyses on correlations between these practices and changes in clinical performance – analyses not possible previously due to the lack of longitudinal data on a nationally representative sample of hospitals.

Past findings on recalled data provides support for its reliability. Because both waves of the MOPS survey solicited responses regarding the primary survey reference year and five years prior, for a subset of respondents there exist two measures of management practices in 2010: one collected on the 2010 MOPS and one collected on the 2015 MOPS. Bloom et al. (2019) analyze these two measures to evaluate the quality of the 5-year recall data collected on the 2015 MOPS.

[15] Throughout the paper, we refer to questions on the 2015 MOPS instrument using the notation MFG-##, where ## is the question's number on the final instrument. Similarly, we refer to questions on the MOPS-HP using HP-## and to questions from the 2009 WMS instrument using WMS-##.

They find that "for managers who started [in] 2008 or before, the correlation [between the two measures] is stable and high (at 0.48)."[16]

3.2 RESPONDENT'S TENURE AS A MANAGER AT THE HOSPITAL

The second MOPS-HP question asks respondents to report the year they began working as a manager at the hospital. Although the MOPS does not ask a comparable question on the respondent's tenure as a manager in the manufacturing plant, the MOPS-HP's question is similar to the WMS asking for the respondent's tenure (number of years) in her post. These data measuring the CNO's tenure may be related to the structure of the hospital's management practices and are important given high CNO turnover. In a national survey of 622 CNOs employed in U.S. hospitals and healthcare systems, 38 percent reported leaving a CNO position with half choosing to take another CNO position (Jones, Havens, and Thompson 2008).

4. NUMBER OF LICENSED HOSPITAL BEDS AND DATA VALIDATION

Section B on the MOPS-HP form collects organizational information on the hospital by asking for the number of licensed beds in 2020 (no recall) (HP-3). Similarly, the WMS' interviewers ask for organizational information including the hospital's age, who owns the hospital, its public-private status, and whether the hospital is part of a network. Additional questions on the hospital's organizational characteristics are not asked on the MOPS-HP, since other Census Bureau data provides information on the business's age, ownership, and employment size. The second section on the MOPS instrument also asks about the organization, including whether the manufacturer's headquarters for the company was at the same location as the sampled establishment.

The MOPS-HP's data on the hospital's number of licensed beds will be validated through comparisons with the American Hospital Association's survey measure that collects the same

[16] Relevant to this discussion of recall data accuracy is the fact that both the MOPS and WMS exhibit substantial evidence of measurement error within survey periods. Bloom et al. (2019) and Bloom and Van Reenen (2007) find that 45 and 49 percent of the variation in the management scores from the 2010 MOPS and WMS data, respectively, can be attributed to measurement error. Because the correlation coefficient necessarily takes values between -1 and 1, Bloom et al. (2019) interpret a value of 0.48 as "high" in light of the measurement error present in the data.

data. Initially the MOPS-HP instead asked for the number of staffed beds. However, in cognitive testing, respondents were confused as hospitals may have differing counts for beds that are staffed, budgeted, operated, or licensed. In round 2, respondents were asked for the number of licensed beds and respondents indicated that they would not have any difficulty providing this information.[17]

A second validation question was also cognitively tested. Respondents were asked for the number of employees at the hospital, which could be validated with data collected in the Census Bureau's Economic Census.[18] The MOPS-HP question asked for a headcount of all full- and part-time employees, but cognitive testing revealed that respondents were likely to report full-time equivalents. This question was also problematic since respondents mentioned having various types of employees, including some who might work per diem or might work for the hospital system but are not on the sampled hospital's payroll. This question was subsequently dropped from the MOPS-HP. Cognitive testing revealed that asking for a headcount of full- and part-time employees required respondents to check employment records or to ask others (e.g. human resources), and this question was considered relatively burdensome compared to reporting the hospital's licensed bed count.[19]

5. MANAGEMENT PRACTICES

The MOPS-HP's content on management practices was largely adapted for hospitals from the MOPS conducted in manufacturing. This core content covers a set of "structured management practices" related to performance monitoring, goals, and performance-based incentives. Implementation of these practices that are more explicit, formal, frequent, or specific are considered to be more structured (Bloom and Van Reenen, 2007). For example, more frequent observation of key performance indicators (KPIs) is a structured monitoring practice. Keeping

[17] The number of licensed beds also remains fairly stable relative to staffed, budgeted, or operated beds since a hospital's request for additional licensed or de-licensed beds may be regulated under a state's certificate of need laws.
[18] In the Economic Census, respondents are instructed to include employees reported on the employer's quarterly federal tax return and to exclude temporary staff, contractors, leased employees, purchased or managed services (e.g., landscaping), and purchased professional or technical services (e.g., software consulting).
[19] Another issue is that hospitals may define part-time status differently such as half-time, or less or more than half-time.

this content consistent with the MOPS will support inter-sectoral comparisons on management practices. Minor changes such as saying "hospitals" not "plants" and "patient care" not "production" were made prior to cognitive testing, with later edits reflecting feedback received from hospital respondents during cognitive testing.

5.1 CLINICAL KEY PERFORMANCE INDICATORS

Prior to round 1 of the MOPS-HP's cognitive testing, content on KPIs was adapted from the MOPS and the WMS. Similar to the MOPS (MFG-2), hospitals were also asked for the number of KPIs that are monitored and the same response options were adopted. Similar to the MOPS questions on how often managers and non-managers reviewed KPIs (MFG-3, 4), the MOPS-HP initially asked how often managers and frontline clinical workers reviewed KPIs and the same responses from the MOPS were provided. The WMS asks similar questions on tracking and reviewing performance, and continuous tracking is considered a more structured management practice (WMS-6, 7) (Bloom and Van Reenen, 2010; Bloom and Van Reenen, 2007; WMS 2009).

The final MOPS question on KPIs asks where physical display boards showing these are located (MFG-5), and a similar question was tested for the MOPS-HP. Continuous tracking and communication to all staff using different visual management tools are considered more structured management practices than infrequent communication or the lack of visual management tools. In addition, communicating these measures with all staff is considered a more structured practice than sharing these metrics with just senior staff (Bloom and Van Reenen, 2010; Bloom and Van Reenen, 2007; WMS 2009).

In round 1 of the MOPS-HP's cognitive testing, respondents were asked how many KPIs they monitored. The questionnaire listed examples adapted from the MOPS which included metrics on cost, waste, clinical quality, financial performance, absenteeism, and patient safety. Hospital respondents were asked to select one option from the following responses: 1-2, 3-9, 10 or more KPIs, or no KPIs. After round 1, however, this question was dropped from the MOPS-HP. Cognitive testing revealed that the number of KPIs monitored could be in the hundreds or even the thousands, and respondents were unable to suggest alternative response categories.

Round 1 of cognitive testing also revealed that a more specific and thorough definition of KPIs was needed in place of listing examples. During round 2, KPIs were defined as "quantifiable metrics used to evaluate the success of any clinical or non-clinical activity or function." This definition was further refined to focus on clinical activities, since tested respondents asked for clarification on whether to include KPIs that might be monitored for financial, dietary, and/or human resource activities.

The MOPS-HP asks respondents how frequently clinical KPIs are reviewed by clinical managers (HP-4). Similar to the 2015 MOPS questions, CNOs can select all applicable responses, which include yearly, quarterly, monthly, weekly, daily, hourly or more frequently, or never. Table 1 shows this question's iterations.

While question 4 asks how often clinical managers *review* KPIs, the next two questions ask how often clinical KPIs are *given* to providers (HP-5) and *given* to frontline clinical workers (FCW) (HP-6). Initially, respondents were asked how often providers and FCWs reviewed the KPIs; however, respondents said they could only report how frequently these indicators were distributed to providers and FCW. Table 2 shows how the questions asking about performance monitoring by non-managers were iterated.

Hospitals are then asked where physical display boards showing quality and other clinical KPIs are located (HP-7). Hospital respondents can report that all physical display boards are in "one place," "multiple places," or they "did not have any display boards, physical or virtual." To collect data on the potential use of technology, a fourth response option that was not included on the MOPS was drafted for the MOPS-HP prior to testing, "We did not have any physical display boards, but personnel had access to virtual display boards (for example, via email or intranet)."

5.2 CLINICAL AND FINANCIAL GOALS

The MOPS-HP asks respondents about clinical and financial goals including time frames for setting them, the effort required to achieve them, and who was aware of them. These questions were adapted from the MOPS's three questions about production targets (MFG-6-8). The WMS also asks about the time horizon of targets (WMS-12). If a respondent indicates the hospital's

focus was only on short-term targets, these were considered less structured management practices than if a hospital translated long-term targets into specific short-term targets. The WMS' interviewers also asked how difficult targets were to achieve and how often they were met (WMS-13). Having targets that are genuinely demanding and developed in consultation with senior staff is considered a more structured practice than having goals that are too easy or impossible to achieve (Bloom and Van Reenen, 2007; WMS, 2009).

During testing, respondents to the MOPS-HP frequently commented that these questions had a close relationship with KPIs and strategic planning. Adapted from the MOPS and WMS, the MOPS-HP's questions initially referred to "targets." However, when the term "targets" was tested, respondents felt this term was less relevant for hospitals and suggested the term "goals," which was also cognitively tested and subsequently adopted.

Question 8 on the MOPS-HP asks whether the time frames for hospital-wide goals for patient care had a "short-" and/or "long-term focus." Initially the question for hospitals referred to "patient care goals," however, respondents suggested saying "hospital-wide goals for patient care" to avoid confusion with individualized patient care plans. If the respondent indicates there are no hospital-wide patient care goals, they are instructed to skip the subsequent questions on achieving and awareness of these goals. Examples of hospital-wide goals for patient care are provided and include "infection rates, readmission rates, and wait times." While providing examples can potentially limit the options considered by the respondent, cognitive testing revealed that respondents found these examples to be particularly helpful.

Analogous to question 8, question 11 on the MOPS-HP asks about the time frame for financial goals at the hospital. Respondents repeatedly provided the same examples for these goals, which suggested that examples are unnecessary for further clarification.[20] If the CNO answers that there are no financial goals or that they are not familiar with the hospital's financial goals, they are instructed to skip the next two questions on achieving and awareness of the financial goals of the hospital.

Questions 9 and 12 on the MOPS-HP asks respondents how much effort was required to achieve the hospital-wide goals for patient care and financial goals, respectively. The response options

[20] Responses included operating margins, days cash on hand, and days in accounts receivable.

include: “without much effort, less than normal effort, normal effort, more than normal effort, or only possible to achieve with extraordinary effort.” The questions are intended to collect data on goals that are achievable but are also stretch goals that are considered challenging or aspirational for the hospital. It was noted during cognitive testing that stretch goals may be more common for patient care than for financial goals, since the latter are more susceptible to external influences such as economic downturns.

The last question on clinical and financial goals asks who is aware of them (HP-10, 13). Feedback during cognitive testing included suggestions for adding the board of directors and/or hospital president as well as non-clinical staff. In the final content, respondents are asked to select all that apply from the following options: “Board of Directors and/or President,” “Senior clinical managers (Chief Nursing Officer, Chief Medical Officer),” “Senior non-clinical managers (Chief Financial Officer, Chief Executive Officer, Chief Operating Officer),” “Clinical managers,” “Non-clinical managers,” “Providers,” and “Frontline clinical workers.” [21]

5.3 PROMOTIONS

MOPS-HP questions on promotions are adapted from the MOPS’s questions asking how managers and non-managers are promoted (MFG-13, 14). When asked in the MOPS about the primary way that non-managers in manufacturing are promoted, respondents can indicate whether they are “based solely on performance and ability,” or “partly” or “mainly on other factors (e.g., tenure or family connections),” or indicate that “managers are normally not promoted.” These questions for hospitals are also related to the WMS’ inquiries on promotion systems and how promotion decisions are made (WMS-17). Respondents to the WMS are asked whether better performers are promoted faster, or promotions are given on the basis of tenure and seniority. Management practices that actively identify, develop, and promote top performers are considered more structured than those that base promotions mainly on tenure (Bloom and Van Reenen, 2007; WMS 2009).

[21] These response options are also adapted from the MOPS’s question with options for senior managers only, most managers and some production workers, most managers and most production workers, and all managers and most production workers (MFG-8).

Questions 14 to 16 on the MOPS-HP ask about the hospital's primary way for typically promoting clinical managers, providers, and FCWs, with a focus on promoting existing individuals rather than external hires. When cognitively testing the questions regarding how hospitals promote FCWs and clinical managers, the MOPS's reference to "family connections" was replaced with "relationships." However, respondents felt this concept was not relevant to hospitals, and their suggestions led to dropping "relationships" and adding "managerial potential." Based on feedback during cognitive testing, this term encapsulates other factors such as experience, tenure, and leadership capabilities.

5.4 UNDERPERFORMANCE

Questions 17 through 19 on the MOPS-HP ask how long it takes to reassign or dismiss an underperforming clinical manager, provider, or FCW. Similarly, questions 15 and 16 in the MOPS ask about the management of underperformance by managers and non-managers. The WMS also asks how long underperformance is tolerated to help test whether the hospital is able to manage these issues (WMS-16). The most structured management practice is associated with moving poor performers out of the hospital or department to less critical roles as soon as underperformance is noted. The least structured practice occurs when a hospital rarely removes underperformers (Bloom and Van Reenen, 2007; WMS, 2009).

When cognitively testing the MOPS-HP, respondents offered absenteeism, inability to meet performance measures, and poor bedside manner as a few examples of underperformance, but noted that these issues may differ by severity.[22] Feedback from the hospitals also revealed that adding instructions on whether or not to include time spent on remediation was important, as training, performance improvement plans, and mentorship were common approaches for addressing underperformance. Since some providers may not be employed by the hospital but have contractual arrangements, tested respondents stressed the importance of asking this question separately for providers and FCWs as responses may vary for contractors versus employees. This feedback helped to motivate asking questions about underperformance and promotions

[22] For example, a relatively minor example of underperformance could include forgetting to help a patient to the toilet, while giving a patient the wrong medication resulting in an adverse reaction would be a more severe example of underperformance.

separately for clinical managers, providers, and frontline clinical workers. Some respondents also commented that they may need to reach out to human resources for help answering these questions. In response, the letter sent to hospitals explaining how to electronically complete the MOPS-HP informs respondents that help can be enlisted from other managers given the nature of the questions asked.

5.5 ADDRESSING PROBLEMS WITH PATIENT CARE DELIVERY

The MOPS-HP asks what happened at the hospital when a problem arose with patient care delivered by providers (HP-20) and FCWs (HP-21).[23, 24] While this question has been adapted from the MOPS's question asking what happens when a problem with the production process arose (MFG-1), one additional response option was added as described below. Similarly, the WMS asks about continuous improvement and consequence management (WMS-5, 9). Management practices that include continuous improvement processes are considered more structured than those that do not, and the best practices are also associated with retraining in areas of weakness when hospitals are dealing with repeated failures (Bloom, Sadun, and Van Reenen, 2014).

In the MOPS-HP, examples of problems with patient care delivery are not included as it was considered impossible to provide an exhaustive list. During cognitive testing respondents mentioned examples such as delays with answering patient call lights or the slow delivery of medication. Instructions have been added to "exclude serious reportable events that result in patient harm or death and are due to a lapse or error in the hospital." The MOPS-HP's wording has also been edited to clarify that the question is asking about "problems with patient care delivered by providers and FCWs and not problems arising from dietary, housekeeping, building maintenance, or other departments."

[23] The questions refer to problems with clinical care and respondents are instructed to exclude serious reportable events that may result in patient harm or death caused by the hospital.
[24] Initially the MOPS-HP started by asking how the hospital addressed problems; however, respondents during round 1 suggested starting with a less difficult question and these questions now appear midway through the survey (HP-20, 21).

When asked about problems with patient care, respondents during cognitive testing were asked to select one response from the following options, "We fixed it but did not take further action," "We fixed it and took action to make sure that it did not happen again," "We fixed it and took action to make sure that it did not happen again and had a continuous improvement process to anticipate problems like these in advance," "We tried to fix it, but did not remediate problems," and "No action was taken." While these responses have been adapted from the MOPS, one additional response option was included on the MOPS-HP prior to testing –"We tried to fix it, but did not remediate the problem." During testing some respondents commented that few would likely choose this option, but it is included to provide a complete set of responses regarding how problems might be managed.

6. MANAGEMENT TRAINING

The MOPS-HP asks respondents about their participation in different types of management training (HP-22). In its section on human resources, the WMS asks for the percent of managers with a Master of Business Administration (MBA). In the MOPS's questions on background characteristics, manufacturers are asked what percent of managers and non-managers at the establishment held a bachelor's degree (MFG-40-41).

Response options on the MOPS-HP list graduate-level degree programs such as an MBA lasting at least one year or more full-time, coursework that lasts less than a year but more than a week, coursework that lasts one week or less, or no participation in management training courses. The quality of these response options benefited from both rounds of cognitive testing. After round 1, an option for a Masters' program in health care administration was added. In the second round of testing, however, this additional option was found to be insufficient for measuring the many advanced degree programs undertaken by CNOs.[25, 26] Rather than trying to develop an exhaustive list of names for non-MBA programs, the final wording refers to "Other graduate-

[25] For example, CNOs may have a Master of Science in Nursing (MSN), a Master of Health Administration (MHA), a Master of Healthcare Management, or a Master of Business Administration (MBA).
[26] When CFOs responded to this question, they suggested adding a response for certified public accountant (CPA).

level degree programs lasting at least one year or more full-time that included management coursework."

7. MANAGEMENT OF TEAM INTERACTIONS

Questions 23 to 28 on the MOPS-HP asks about meetings dedicated to the discussion of clinical outcomes. These relate to WMS questions that ask about the frequency of reviews for the hospital's main performance indicators, who meets to review the hospital's KPIs, performance dialogue questions that measure the quality of review discussions, and consequence management questions that indicate whether different levels of plan-based performance lead to different consequences (WMS-7-9). These data help measure whether management practices are more or less structured. More structured management practices are associated with communication with all staff rather than just senior staff, periodic or continual reviews of performance, meeting objectives that are clear to all participants, the availability of meaningful data, and follow-up plans to help ensure continuous improvement is communicated to all staff (Bloom and Van Reenen, 2007; WMS, 2009). The MOPS does not ask respondents about the management of team interactions.

Initially this MOPS-HP section on the management of team interactions began by asking how frequently these meetings dedicated to the discussion of clinical outcomes were held, but cognitive testing results suggested that the first question should ask who participated in those meetings (HP-23). Respondents also suggested adding the board of directors to the possible response options (HP-23). Along with this addition, the responses listing clinical staff were edited to move away from terms such as "department chiefs/nurse managers, physicians, nurses, and other support staff." Respondents can now select all that apply from a listing that includes: "Board of Directors and/or President," "Senior clinical managers," "Clinical Managers," "Non-clinical managers," "Providers," and "Frontline clinical workers." If the respondent answers, "We did not hold meetings dedicated to the discussion of clinical outcomes," then all subsequent questions in this section are skipped (HP 24-28).

After being asked about participation in meetings dedicated to discussing clinical outcomes, respondents to the MOPS-HP are asked how frequently these meetings are held and can select all

that apply from the following options: “Yearly,” “Quarterly,” “Monthly,” “Weekly,” and “Daily or multiple times a day” (HP-24). The subsequent question asks about the intent of meetings dedicated to the discussion of clinical outcomes, and respondents are instructed to select one response to indicate whether the meetings were used “Exclusively to report past performance,” “Exclusively to discuss ways to improve future performance,” or “To report past performance, as well as ways to improve future performance” (HP-25).

In question 26 on the MOPS-HP, respondents are asked who could view data during the meetings dedicated to the discussion of clinical outcomes. During cognitive testing, respondents were asked about their interpretation of “data,” and they provided examples that included KPIs, readmission rates, infection rates, and scorecards. Because respondents could readily provide examples, listing any in the instructions for the question was deemed unnecessary. Question 26 provides the same response options as question 23 for consistency.

When the MOPS-HP asks what happened after meetings dedicated to discussing clinical outcomes, respondents can answer whether the hospital monitored adherence to follow-up plans or did not draft or revise follow-up plans (HP-27). When probed on the meaning of adherence, many thought this referred to someone watching and reporting on these activities. No changes were made to the initial wording that was drafted and tested for this question or its responses, since respondents indicated that they understood the terms used and the question’s intent. The MOPS-HP’s last question on managing team interactions asks who could view the follow-up plans (HP-28). The responses are consistent with those for question 23 and 26 discussed above.

8. STAFFING AND ALLOCATION OF HUMAN RESOURCES

Four questions in the next section of the MOPS-HP form ask who decided how work was allocated to the hospital’s clinical staff, whether FCWs were moved to different hospital units as needed and if movement was coordinated by one central office, who determined the typical ratios for nursing staff to patients, and whether clinical teams were formed based on individuals’ past experience working with one another (HP-29-32). These questions relate to those on the WMS asking about the good use of human resources that help test whether staff are deployed to tasks for which they are best qualified, but they may also help out elsewhere when needed

(WMS-4). The most structured management practices are indicated if the hospital recognizes that deploying staff is a key issue and routinely shifts staff from less busy to busy areas in a coordinated manner based on documented skills (WMS, 2009).

During round 1 of the MOPS-HP's cognitive testing, respondents were asked for the hospital's typical "nurse to patient ratio" and the typical "medical assistant to patient ratio." These two questions were subsequently dropped, since respondents explained these ratios could differ according to a number of factors, including budgetary reasons and/or patient acuity, which can differ by hospital unit or by day. Respondents also advised that an average ratio would not be representative, and these data would be difficult if not impossible to report.

The MOPS-HP's first question on staffing asks who decides how work is allocated to clinical staff at the hospital with respondents selecting all responses that apply (HP-29). Feedback during both rounds of testing revealed no need to edit the wording of this question, but respondents suggested that the list of possible responses be expanded beyond just senior managers (CNO, CMO) and department chiefs/nurse managers. The revised responses for round 2 included senior clinical managers, clinical managers, physicians, and FCWs. As noted elsewhere, the term physicians were replaced with providers after round 2. Respondents can select all that apply from the final response options that include "Senior clinical managers (Chief Nursing Officer, Chief Medical Officer)," "Senior non-clinical managers (Chief Executive Officer, Chief Financial Officer, Chief Operating Officer)," "Clinical managers," "Non-clinical managers," "Providers," and "Frontline clinical workers." Question 31 that asks who determines the typical ratios for nursing staff to patients at the hospital provides one additional response option for "State and/or federal regulations," since these may specify required staffing levels.

After cognitive testing had been completed, question 30 was developed to measure hospitals' management practices related to moving FCWs to different units within the hospital when needed, such as in response to understaffing or increased patient needs, and whether this movement was coordinated by one central office. Examples of when a hospital unit might need FCWs were added since the question focuses on *how* these workers were moved rather than *why* they were needed. In addition, the wording was changed from "across hospital units" to "different units within this hospital" since multi-hospital organizations might move FCWs

between hospitals. Originally the responses referred to "one central person" coordinating the movement of FCW but was changed to "one central office."

The last question in this section asks what best describes the hospital's approach to staffing teams for clinical care. The goal is to collect information on how proactively a hospital manages team familiarity (HP-32). Respondents can answer whether the hospital attempts to put individuals together with others with whom they have worked extensively in the past or that the hospital does not account for familiarity. In round 1, this question referred to "staffing care teams." For round 2, the question said "staffing clinical care teams" and the final wording is "staffing teams for clinical care" for clarification and survey consistency.

9. STANDARDIZED CLINICAL PROTOCOLS

Standardized protocols are widely used in hospitals to help guide clinical care by walking staff through the steps that are key for complex medical procedures.[27] In the *Checklist Manifesto,* Atul Gawande (2011) describes the use of safe surgery checklists that can help avoid errors that occur during complex procedures because clinicians fail to ask key questions, miss a step, or fail to have contingency plans in place. In the next section on the MOPS-HP, four questions ask about the use, development, modification/updating, and monitoring[28] of standardized clinical protocols (HP-32-35).

The MOPS-HP's questions on protocols are related to a question on the WMS that helps test if there are standardized procedures (e.g., integrated clinical pathways) that are applied and monitored systematically (WMS-3). The four-part question on the WMS asks (a) how standardized the hospital's main clinical processes are, (b) how clear clinical staff are in carrying out the specific procedures, (c) whether or not the clinical staff use tools such as checklists and patient bar-coding to ensure procedures are followed properly, and (d) how managers are able to monitor whether staff follows the established protocols. The most structured management

[27] During testing, hospital respondents often commented that standardized protocols are used for both clinical and non-clinical activities (e.g., checklists for testing fire safety equipment). However, the MOPS-HP questions only ask about standardized *clinical* protocols and can be answered by CNOs based on testing.
[28] An example of monitoring is checking the chart of a patient with pneumonia against standardized clinical protocols to be sure that the specified steps were followed.

practices are associated with protocols being known and used by all clinical staff with regular monitoring as a form of follow-up, while the least structured practices are associated with little standardization as evidenced by different clinical staff using different approaches for the same treatments (Bloom, Sadun, and Van Reenen, 2014).

In round 1 of the MOPS-HP's cognitive testing, examples of standardized clinical protocols included checklists or patient bar-coding. Described by some as clinical pathways or maps, most respondents had a clear interpretation of protocols, thereby eliminating the need to include examples or definitions. Initially the MOPS-HP also cognitively tested questions asking respondents how many standardized clinical protocols were used at the hospital. However, many respondents explained that these existed anywhere that standard definitions for providing care existed and could be specific to multiple departments in the hospital. The number of protocols could be in the hundreds if not the thousands and even estimates were difficult to obtain. Since the interest was in whether a hospital used *any* protocols, and cognitive testing revealed this to be the case, this question was dropped from the MOPS-HP.

Other questions in this section received positive feedback from respondents during testing and required minimal edits to their wording, but they required changes to the response options (HP-33-35, 37). Each of these questions asks CNOs to select all responses that apply from a list that includes "Senior clinical managers (Chief Nursing Officer, Chief Medical Officer)," "Senior non-clinical managers (Chief Executive Officer, Chief Financial Officer, Chief Operating Officer)," "Clinical managers," "Non-clinical managers," "Providers," and "Frontline clinical workers." Chief Operating Officers (COO) were added to the examples for senior non-clinical managers based on feedback during testing. Another response for "Other" was considered but dropped prior to round 1 of cognitive testing, since including this option when collecting the MOPS's manufacturing data resulted in adding noise and limited the data's usability.[29]

Some questions in this section also have an additional response to those listed above (HP-33-35, 37). For question 33, if the respondent indicates the hospital does not use standardized clinical protocols, she skips the remaining questions; however, cognitive testing indicated the use of protocols has increased over time suggesting most hospitals would indicate their use.

[29] Admittedly, measurement error might also be introduced by omitting 'other' from the response options and requiring selection from the listed staff positions.

Respondents can also report that new protocols are not created (HP-34), protocols are not modified or updated (HP-35), or protocols are not monitored (HP-37).

Unlike the responses to the other questions in this section on who is involved with the hospital's standardized clinical protocols, question 36's responses measure how quickly the hospital updated its protocols once the need to do so was first identified.[30] Final edits to an initial draft of this new question focused primarily on editing and collapsing the time frames in the response options.

10. DOCUMENTATION OF PATIENTS' MEDICAL RECORDS

Providers' complete documentation in patients' medical records is important for delivering clinical care and receiving appropriate payment for services. Given their potential impact on the hospital's revenues and financial performance, questions about medical record documentation were initially tested with only CFOs. However, cognitive testing revealed that CFOs had difficulty answering these questions on their own and would often need to consult with other staff (e.g. medical records or billing staff). In round 2, these questions were added to the CNO form. Relative to CFOs, CNOs had less trouble answering these questions, but they too asked if they could consult with other staff including those working with medical records, health information, and/or quality assurance at the hospital.

Initially, the MOPS-HP form grouped these questions in a section labeled "Coding and Documentation," but round 1's feedback from hospital CFOs led to changes prior to round 2's testing with CNOs. For example, respondents explained that providers and staff document medical records and others code for billing. After round 1, the question asking whether FCWs were aware of documenting key words for reimbursement was deemed unnecessary and dropped, since most respondents advised that FCWs were not involved in the documentation or coding processes. After round 2, a question asking who interacted with systems and tools used for documenting patient medical records was also dropped. Many tested respondents interpreted

[30] In the final response for the previous question (HP-35), a skip pattern was added. Respondents do not see question (HP-36) if they report that standardized clinical protocols were not usually updated or modified at the hospital.

systems and tools as being electronic health records (EHR) but indicated that the collected data would show little variation since most clinical staff interacted with EHRs.

The first question in this section asks about the hospital's actions when providers incompletely document patients' medical records (HP-38). This wording reflects respondents' emphasis during testing on *complete* documentation rather than poor documentation. New response options were also suggested including: "Required provider to meet with compliance office" and "Required provider to undergo peer review" (e.g., by the hospital's medical staff). A response for "Required provider to meet with other staff not listed above" was recommended and added to include individuals from medical records, health information departments, and/or clinical documentation experts that may carry different titles across hospitals. Cognitive testing also led to a suggested response option for "Provider was penalized financially," which some respondents thought could include suspensions or removal of admitting privileges. Respondents can select all that apply from the following final options, "Required provider to meet with hospital senior managers or supervisors," "Required provider to meet with compliance office," "Required provider to undergo peer review," "Required provider to meet with other staff not listed above," "Required provider to receive additional training," "Provider was reassigned or dismissed," "Provider was penalized financially," "No actions were taken for providers' incomplete documentation of patients' medical records," and "There was no issue with providers' incomplete documentation."

The second question in this section, and the last one on the survey, asks, "What actions were taken at this hospital to recognize a PROVIDER fully completing their documentation of patients' medical records?" (HP-39) While the responses were edited after each round of cognitive testing, they consistently included options for the hospital using non-financial or financial incentives for complete documentation or reporting no financial or non-financial incentives. Respondents are asked to select all that apply from the following options, "This hospital used NON-FINANCIAL incentives for complete documentation of patients' medical records," "This hospital used FINANCIAL incentives for complete documentation of patients' medical records," and "This hospital used NO incentives for complete documentation of patients' medical records, financial or non-financial." Respondents commented that physician-hospital employment contracts may stipulate financial incentives for meeting quality metrics and

these might include bonuses or revenue sharing. Examples of non-financial incentives might include recognition by managers or better access to hospital amenities.

11. FINAL REMARKS

The goal of conducting the MOPS-HP is to measure management practices across a representative sample of U.S. hospitals. These data can be used to study how these practices differ across hospitals and how they relate to both financial and clinical outcomes. Conditional on data quality, the Census Bureau will host tables showing how hospital management practices differ by characteristics such as ownership, location, or size. In addition, the collected information from the MOPS-HP will be evaluated for use in web-based benchmarking tools for hospitals and clinicians that may help identify potential areas for improvement.

Following the completion of cognitive testing, new content was added to measure a hospital's preparedness for coordinated movement of FCWs if they were moved when needed to different units and to measure how quickly a hospital modifies or updates its standardized clinical protocols once the need to do so was identified. This paper details the development of the MOPS-HP content, which is based on the 2015 MOPS and the 2009 WMS.[31]

Cognitively testing the MOPS-HP content impacted the survey in several ways. First, the Census Bureau and the survey sponsor determined that CNOs are more appropriate respondents for this survey given its focus on clinical activities rather than CFOs.[32] Second, cognitive testing confirmed that answers can be provided for a 5-year recall period; however, as noted earlier, this was later changed to a 2-year recall period. Third, the question order was changed to start the survey with concrete questions on tenure and licensed beds before moving to more subjective questions. Fourth, the term "providers" was introduced to include physicians and others who are not considered FCWs. Since management practices may differ for providers, additional questions were added to the MOPS-HP to ask specifically about these individuals. Finally, questions asking for counts of KPIs and protocols were dropped because the magnitudes of the appropriate

[31] Future papers will describe survey operations in detail and will present findings from the first collection of the MOPS-HP data.

[32] In addition, CFOs were not providing any unique data after removing the medical record documentation questions from the CFO form and adding them to the CNO form.

responses reduced the data's value, and questions asking for staffing ratios were dropped since the ratios could differ by hospital unit or day depending on patient acuity.

During cognitive testing in 2018, the MOPS-HP asked for data from 2012 and 2017, and this five-year span includes some noteworthy changes to the hospital industry. There has been an increase in hospitals belonging to complex health systems, which might also include long-term care or urgent care facilities or physicians' offices, and this organizational structure might affect management practices. For example, clinical and financial goals may be determined at the system level and apply to all member hospitals, and this phenomenon could be increasing in prevalence as the number of hospitals that are part of larger health systems grows. The goal of the MOPS-HP is to collect data on management practices at the hospital's physical location where services are provided, and as such, the questions' wording specifies "this hospital."

During the 5-year recall period for testing, employment arrangements have also evolved with more physicians becoming employees of the hospital. These changes can affect management practices related to financial incentives and responses to underperformance if the physician is an employee versus a contractor. Although these changes in hospital organization likely have implications for management practices, the decision was made to introduce the shorter, one-year recall window to provide a clear frame of reference for respondents as they can likely distinguish between the pre- and post-COVID-19 pandemic periods. Indeed, some respondents commented during testing that they did not have a computer system for patient medical records until after 2012. This is likely to be less relevant with the 2-year recall for 2019 and 2020, when hospitals might experience fewer changes in computer use.

Data collected in the MOPS-HP hold the potential for a deeper understanding of how management practices at a hospital relate to its clinical and financial performance by using this information in combination with the Census Bureau's financial business data and external information on clinical outcomes for hospitals. Earlier data collected from manufacturers and hospitals show that more structured management practices are associated with better financial performance and clinical outcomes. Similarly, these new MOPS-HP can provide new insight on which practices may help promote efficiency, patient satisfaction, and clinical outcomes in the hospital industry that faced an unprecedented public health emergency in 2020.

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Table 1. Performance Monitoring by Clinical Managers

Gray highlights edits following cognitive testing rounds.

2015 MOPS	*MOPS-HP*		
	Round 1 Testing	***Round 2 Cognitive Testing***	***Final CNO Form***
Q3. During 2010 and 2015, how frequently were the key performance indicators reviewed by managers at this establishment? A manager is someone who has employees directly reporting to them, with whom they meet on a regular basis, and whose pay and promotion they may be involved with, e.g., Plant Manager, Human Resource Manager, Quality Manager. **Mark all that apply.** Yearly Quarterly Monthly Weekly Daily Hourly or more frequently Never _____ *Examples of KPIs: metrics on production, cost, waste, quality, inventory, energy, absenteeism, and deliveries on time*	**Q2. During 2012 and 2017, how frequently were key performance indicators reviewed by managers at this hospital?** Note: A manager is someone who has employees directly reporting to them, with whom they meet on a regular basis, and whose pay and promotion they may be involved with. A manager is involved with clinical /operational decision making and is not a frontline clinical worker (see Question 4). Same responses as 2015 MOPS. _____ *Examples of KPIS: metrics on cost, waste, clinical quality, financial performance, absenteeism, and patient safety.*	A **KEY PERFORMANCE INDICATOR** is a quantifiable metric used to evaluate the success of any clinical or non-clinical activity or function. For questions 3 and 4, consider key performance indicators that are used in any clinical or non-clinical activities. **Q3. In 2012 and 2017, how frequently were key performance indicators reviewed by MANAGERS [CLINICAL MANAGERS] at this hospital?** **CFO Form:** A **manager** is someone who has employees directly reporting to them, with whom they meet on a regular basis, and whose pay and promotion they may be involved with. **CNO Form:** A **clinical manager** is someone who has employees directly reporting to them, with whom they meet on a regular basis, and whose pay is and promotion they may be involved with. A clinical manager is involved in patient care decision-making. Same responses as 2015 MOPS.	**Q4. In 2019 and 2020, how frequently were the clinical key performance indicators reviewed by CLINICAL MANAGERS at this hospital?** A **CLINICAL MANAGER** is someone who has employees directly reporting to them, with whom they meet on a regular basis, and whose pay is and promotion they may be involved with. A clinical manager is involved in patient care decision-making. A **KEY PERFORMANCE INDICATOR** is a quantifiable metric used to evaluate the success of any clinical activity or function. For Questions 3, 4, and 5, consider key performance indicators that are used in any clinical activities at this hospital. Same responses as 2015 MOPS.

Table 2. Performance Monitoring by Providers and Frontline Clinical Workers

Gray highlights edits following cognitive testing rounds.

2015 MOPS	*MOPS-HP*		
	Round 1	***Round 2***	***Final***
Q4. During 2010 and 2015, how frequently were the key performance indicators reviewed by non-managers at this establishment? Non-managers are all employees at the establishment who are not managers as defined in 3. **Mark all that apply.** Yearly Quarterly Monthly Weekly Daily Hourly or more frequently Never	**Q4. During 2012 and 2017, how frequently were the key performance indicators reviewed by frontline clinical workers at this hospital?** Note: Frontline clinical workers include all clinical staff with non-managerial responsibilities, including staff physicians, staff nurses, and medical assistants. Same responses as 2015 MOPS	**Q4. In 2012 and 2017, how frequently were the key performance indicators provided to PHYSICIANS and FRONTLINE CLINICAL WORKERS at this hospital?** **Frontline clinical workers** include all clinical staff with direct patient care responsibilities (such as nurses, nurses' aides, physical/occupational/speech therapist, radiology and laboratory technicians), who do NOT have employees directly reporting to them. Do NOT include non-clinical frontline staff such as food services, housekeeping, or maintenance staff. Same responses as 2015 MOPS	**Q5. In 2019 and 2020, how frequently were the key performance indicators given to PROVIDERS at this hospital?** **PROVIDERS** include physicians, physicians' assistants, advanced practice nurses, and others who are responsible for evaluating, diagnosing, and treating patients. Typically providers do not have employees directly reporting to them. Same responses as 2015 MOPS **Q6. In 2019 and 2020, how frequently were the key performance indicators given to FRONTLINE CLINICAL WORKERS at this hospital?** Definition of FRONTLINE CLINICAL WORKERS from round 2. Same responses as 2015 MOPS

Appendix A

MOPS-HP Final Survey Instrument

MANAGEMENT AND ORGANIZATIONAL PRACTICES SURVEY-HOSPITALS

SECTION A
TENURE

1 **What year did you start working at this hospital?** . . . . . Year

2 **What year did you start working *as a manager* at this hospital?** . . . . . Year

SECTION B
ORGANIZATIONAL CHARACTERISTICS

3 **In 2020, how many licensed beds did this hospital have?** . . . . . Number

SECTION C
MANAGEMENT PRACTICES

4 **In 2019 and 2020, how frequently were the clinical key performance indicators reviewed by CLINICAL MANAGERS at this hospital?**

A CLINICAL MANAGER is someone who has employees directly reporting to them, with whom they meet on a regular basis, and whose pay and promotion they may be involved with. A clinical manager is involved in patient care decision-making.

A CLINICAL KEY PERFORMANCE INDICATOR is a quantifiable metric used to evaluate the success of any clinical activity or function. For Questions 4, 5, and 6, consider key performance indicators that are used in any clinical activities at this hospital.

Select all that apply	2020	2019
Yearly	☐	☐
Quarterly	☐	☐
Monthly	☐	☐
Weekly	☐	☐
Daily	☐	☐
Hourly or more frequently	☐	☐
Never	☐	☐

5 **In 2019 and 2020, how frequently were the clinical key performance indicators given to PROVIDERS at this hospital?**

PROVIDERS include physicians, physicians' assistants, advanced practice nurses, and others who are responsible for evaluating, diagnosing, and treating patients. Typically, providers do NOT have employees directly reporting to them.

Select all that apply	2020	2019
Yearly	☐	☐
Quarterly	☐	☐
Monthly	☐	☐
Weekly	☐	☐
Daily	☐	☐
Hourly or more frequently	☐	☐
Never	☐	☐

6 **In 2019 and 2020, how frequently were the clinical key performance indicators given to FRONTLINE CLINICAL WORKERS at this hospital?**

FRONTLINE CLINICAL WORKERS include all clinical staff with direct patient care responsibilities (such as nurses, nurses' aides, physical/occupational/speech/respiratory therapists, radiology and laboratory technicians), who do NOT have employees directly reporting to them. Do NOT include non-clinical frontline staff such as food services, housekeeping, or maintenance staff.

Select all that apply	2020	2019
Yearly	☐	☐
Quarterly	☐	☐
Monthly	☐	☐
Weekly	☐	☐
Daily	☐	☐
Hourly or more frequently	☐	☐
Never	☐	☐

7 **In 2019 and 2020, where were the physical display boards showing quality and other clinical key performance indicators located at this hospital?**

Select one box for each year	2020	2019
All physical display boards were located in one place	☐	☐
Physical display boards were located in multiple places	☐	☐
We did not have any physical display boards, but personnel had access to virtual display boards (for example, via email or intranet)	☐	☐
We did not have any display boards, physical or virtual	☐	☐

8 **In 2019 and 2020, what best describes the time frame of hospital-wide goals for PATIENT CARE at this hospital?**

Examples of **hospital-wide goals for patient care:** infection rates, readmission rates, and wait times.

Select one box for each year	2020	2019
Main focus was on short-term (one year or less) patient care goals	☐	☐
Main focus was on long-term (more than one year) patient care goals	☐	☐
Combination of short-term and long-term patient care goals	☐	☐
No hospital-wide patient care goals (**SKIP to Question 11**)	☐	☐

9 **In 2019 and 2020, how much effort was required for this hospital to achieve its hospital-wide goals for PATIENT CARE?**

Select one box for each year	2020	2019
Possible to achieve without much effort	☐	☐
Possible to achieve with less than normal effort	☐	☐
Possible to achieve with normal effort	☐	☐
Possible to achieve with more than normal effort	☐	☐
Only possible to achieve with extraordinary effort	☐	☐

10 **In 2019 and 2020, who was aware of the hospital-wide goals for PATIENT CARE at this hospital?**

Select all that apply	2020	2019
Board of Directors and/or President	☐	☐
Senior clinical managers, such as Chief Nursing Officer (CNO) or Chief Medical Officer (CMO)	☐	☐
Senior non-clinical managers, such as Chief Financial Officer (CFO), Chief Executive Officer (CEO), Chief Operating Officer (COO)	☐	☐
Clinical managers	☐	☐
Non-clinical managers (A non-clinical manager has employees reporting to them but is NOT involved in patient care decision-making)	☐	☐
Providers	☐	☐
Frontline clinical workers	☐	☐

11 **In 2019 and 2020, what best describes the time frame of FINANCIAL goals at this hospital?**

Select one box for each year

	2020	2019
Main focus was on short-term (one year or less) financial goals	☐	☐
Main focus was on long-term (more than one year) financial goals	☐	☐
Combination of short-term and long-term financial goals	☐	☐
No financial goals (**SKIP to Question 14**)	☐	☐
I am unfamiliar with financial goals at this hospital (**SKIP to Question 14**)	☐	☐

12 **In 2019 and 2020, how much effort was required for this hospital to achieve its FINANCIAL goals?**

Select one box for each year

	2020	2019
Possible to achieve without much effort	☐	☐
Possible to achieve with less than normal effort	☐	☐
Possible to achieve with normal effort	☐	☐
Possible to achieve with more than normal effort	☐	☐
Only possible to achieve with extraordinary effort	☐	☐

13 **In 2019 and 2020, who was aware of the FINANCIAL goals at this hospital?**

Select all that apply

	2020	2019
Board of Directors and/or President	☐	☐
Senior clinical managers (CNO, CMO)	☐	☐
Senior non-clinical managers (CFO, CEO, COO)	☐	☐
Clinical managers	☐	☐
Non-clinical managers	☐	☐
Providers	☐	☐
Frontline clinical workers	☐	☐

14 **In 2019 and 2020, what was the primary way CLINICAL MANAGERS were promoted at this hospital?**

Select one box for each year	2020	2019
Promotions were based SOLELY on performance, ability, and managerial potential	☐	☐
Promotions were based PARTLY on performance, ability, and managerial potential, and partly on other factors	☐	☐
Promotions were based mainly on factors OTHER THAN performance, ability, and managerial potential	☐	☐
Clinical managers were typically not promoted	☐	☐

15 **In 2019 and 2020, what was the typical way PROVIDERS were promoted to managerial roles at this hospital?**

Select one box for each year	2020	2019
Promotions were based SOLELY on performance, ability, and managerial potential	☐	☐
Promotions were based PARTLY on performance, ability, and managerial potential, and partly on other factors	☐	☐
Promotions were based mainly on factors OTHER THAN performance, ability, and managerial potential	☐	☐
Providers were typically not promoted	☐	☐

16 **In 2019 and 2020, what was the typical way FRONTLINE CLINICAL WORKERS were promoted to managerial roles at this hospital?**

Select one box for each year	2020	2019
Promotions were based SOLELY on performance, ability, and managerial potential	☐	☐
Promotions were based PARTLY on performance, ability, and managerial potential, and partly on other factors	☐	☐
Promotions were based mainly on factors OTHER THAN performance, ability, and managerial potential	☐	☐
Frontline clinical workers were typically not promoted	☐	☐

17 **In 2019 and 2020, how long did the reassignment or dismissal process typically take after first noting a CLINICAL MANAGER'S underperformance? Include time spent on remediation.**

Select one box for each year	2020	2019
Within 6 months of identifying a clinical manager's underperformance	☐	☐
After 6 months of identifying a clinical manager's underperformance	☐	☐
Underperforming clinical managers were rarely or never reassigned or dismissed	☐	☐

18 **In 2019 and 2020, how long did the reassignment or dismissal process typically take after first noting a PROVIDER'S underperformance? Include time spent on remediation.**

Select one box for each year	2020	2019
Within 6 months of identifying a provider's underperformance	☐	☐
After 6 months of identifying a provider's underperformance	☐	☐
Underperforming providers were rarely or never reassigned or dismissed	☐	☐

19 **In 2019 and 2020, how long did the reassignment or dismissal process typically take after first noting a FRONTLINE CLINICAL WORKER's underperformance? Include time spent on remediation.**

Select one box for each year	2020	2019
Within 6 months of identifying a frontline clinical worker's underperformance	☐	☐
After 6 months of identifying a frontline clinical worker's underperformance	☐	☐
Underperforming frontline clinical workers were rarely or never reassigned or dismissed	☐	☐

20 **In 2019 and 2020, how did this hospital typically address problems with patient care delivered by PROVIDERS?**

Please respond for clinical problems that were NOT serious reportable events.

Select one box for each year	2020	2019
We fixed it but did not take further action	☐	☐
We fixed it and took action to make sure that it did not happen again	☐	☐
We fixed it and took action to make sure that it did not happen again and had a continuous improvement process to anticipate problems like these in advance	☐	☐
We tried to fix it, but did not remediate problem	☐	☐
No action was taken	☐	☐

21 **In 2019 and 2020, how did this hospital typically address problems with patient care delivered by FRONTLINE CLINICAL WORKERS?**

Please respond for clinical problems that were NOT serious reportable events.

Select one box for each year	2020	2019
We fixed it but did not take further action	☐	☐
We fixed it and took action to make sure that it did not happen again	☐	☐
We fixed it and took action to make sure that it did not happen again and had a continuous improvement process to anticipate problems like these in advance	☐	☐
We tried to fix it, but did not remediate problem	☐	☐
No action was taken	☐	☐

SECTION D
MANAGEMENT TRAINING

22 **Which of the following types of management training courses have you participated in?**

Select all that apply

Master of Business Administration (MBA) or executive MBA lasting at least one year or more full time	☐
Other graduate-level degree programs lasting at least one year or more full time that included management coursework	☐
Selected management courses shorter than one year but longer than one week	☐
Selected management courses lasting one week or less	☐
I have not participated in any management training courses	☐

SECTION E
MANAGEMENT OF TEAM INTERACTIONS

23 **In 2019 and 2020, who participated in meetings dedicated to the discussion of clinical outcomes?**

Select all that apply	2020	2019
Board of Directors and/or President	☐	☐
Senior clinical managers (CNO, CMO)	☐	☐
Clinical managers	☐	☐
Non-clinical managers	☐	☐
Providers	☐	☐
Frontline clinical workers	☐	☐
We did not hold meetings dedicated to the discussion of clinical outcomes (**SKIP to Question 29**)	☐	☐

24 **In 2019 and 2020, how often did CLINICAL MANAGERS hold meetings that were dedicated to the discussion of clinical outcomes at this hospital?**

Select all that apply

	2020	2019
Yearly	☐	☐
Quarterly	☐	☐
Monthly	☐	☐
Weekly	☐	☐
Daily or multiple times within a day	☐	☐

25 **In 2019 and 2020, what best describes the intent of the meetings that were dedicated to the discussion of clinical outcomes at this hospital?**

Select one box for each year

	2020	2019
The meetings were used exclusively to report past performance	☐	☐
The meetings were used exclusively to discuss ways to improve future performance	☐	☐
The meetings were used to report past performance, as well as ways to improve future performance	☐	☐

26 **In 2019 and 2020, what best describes who could view data during meetings dedicated to the discussion of clinical outcomes?**

Select all that apply

	2020	2019
Board of Directors and/or President	☐	☐
Senior clinical managers (CNO, CMO)	☐	☐
Clinical managers	☐	☐
Non-clinical managers	☐	☐
Providers	☐	☐
Frontline clinical workers	☐	☐
The meetings did not usually involve viewing data	☐	☐

27 **In 2019 and 2020, what best describes what happened after meetings dedicated to the discussion of clinical outcomes?**

Select one box for each year

	2020	2019
Follow-up plans were drafted or revised, but adherence was not actively monitored	☐	☐
Follow-up plans were drafted or revised, and adherence was actively monitored	☐	☐
No follow-up plans were drafted or revised (**SKIP to Question 29**)	☐	☐

28 **In 2019 and 2020, who could view follow-up plans drafted or revised after meetings dedicated to the discussion of clinical outcomes?**

Select all that apply

	2020	2019
Board of Directors and/or President	☐	☐
Senior clinical managers (CNO, CMO)	☐	☐
Clinical managers	☐	☐
Non-clinical managers	☐	☐
Providers	☐	☐
Frontline clinical workers	☐	☐

SECTION F
STAFFING AND ALLOCATION OF HUMAN RESOURCES

29 **In 2019 and 2020, who decided how work was allocated to clinical staff at this hospital?**

Select all that apply

	2020	2019
Senior clinical managers (CNO, CMO)	☐	☐
Senior non-clinical managers (CEO, CFO, COO)	☐	☐
Clinical managers	☐	☐
Non-clinical managers	☐	☐
Providers	☐	☐
Frontline clinical workers	☐	☐

30 **In 2019 and 2020, how were FRONTLINE CLINICAL WORKERS moved to different units within this hospital when needed (for example, in response to understaffing or increased patient care needs)?**

Select one box for each year

	2020	2019
Frontline clinical workers were moved to different units within this hospital when needed, and ONE central office coordinated this process	☐	☐
Frontline clinical workers were moved to different units within this hospital when needed, but NO one central office coordinated this process	☐	☐
Frontline clinical workers were not moved to different units within this hospital when needed	☐	☐

31 **In 2019 and 2020, who determined the typical ratios for nursing staff to patients at this hospital?**

Select all that apply

	2020	2019
Senior clinical managers (CNO, CMO)	☐	☐
Senior non-clinical managers (CEO, CFO, COO)	☐	☐
Clinical managers	☐	☐
Non-clinical managers	☐	☐
Providers	☐	☐
Frontline clinical workers	☐	☐
State and/or federal regulations	☐	☐

32 **In 2019 and 2020, which best describes this hospital's approach to staffing teams for clinical care, based on the team members' experience working together?**

Select one box for each year

	2020	2019
Typically, this hospital attempted to put individuals together with others with whom they HAD worked extensively in the past	☐	☐
Typically, this hospital attempted to put individuals together with others with whom they HAD NOT worked extensively in the past	☐	☐
Typically, this hospital DID NOT ACCOUNT for the familiarity that individuals had working together in the past	☐	☐

SECTION G
STANDARDIZED CLINICAL PROTOCOLS

33 **In 2019 and 2020, who of the following USED standardized clinical protocols at this hospital?**

Select all that apply

	2020	2019
Senior clinical managers (CNO, CMO)	☐	☐
Senior non-clinical managers (CEO, CFO, COO)	☐	☐
Clinical managers	☐	☐
Non-clinical managers	☐	☐
Providers	☐	☐
Frontline clinical workers	☐	☐
This hospital did not use standardized clinical protocols (**SKIP to Question 38**)	☐	☐

34 **In 2019 and 2020, who of the following DEVELOPED new standardized clinical protocols at this hospital?**

Select all that apply

	2020	2019
Senior clinical managers (CNO, CMO)	☐	☐
Senior non-clinical managers (CEO, CFO, COO)	☐	☐
Clinical managers	☐	☐
Non-clinical managers	☐	☐
Providers	☐	☐
Frontline clinical workers	☐	☐
No new standardized clinical protocols were created at this hospital	☐	☐
Only state and/or federally-mandated clinical protocols were used at this hospital	☐	☐

35 **In 2019 and 2020, who of the following MODIFIED or UPDATED standardized clinical protocols at this hospital?**

Select all that apply

	2020	2019
Senior clinical managers (CNO, CMO)	☐	☐
Senior non-clinical managers (CEO, CFO, COO)	☐	☐
Clinical managers	☐	☐
Non-clinical managers	☐	☐
Providers	☐	☐
Frontline clinical workers	☐	☐
Standardized clinical protocols were not usually modified or updated at this hospital (**SKIP to Question 37**)	☐	☐

36 **In 2019 and 2020, within what time period did this hospital typically MODIFY or UPDATE its standardized clinical protocols after the need to do so was first identified?**

Select one box for each year

	2020	2019
Within one week of identifying the need	☐	☐
Within one month of identifying the need	☐	☐
Within three months of identifying the need	☐	☐
Within six months of identifying the need	☐	☐
More than six months after the need was first identified	☐	☐

37 **In 2019 and 2020, who of the following MONITORED the appropriate use of standardized clinical protocols at this hospital?**

Select all that apply	2020	2019
Senior clinical managers (CNO, CMO)	☐	☐
Senior non-clinical managers (CEO, CFO, COO)	☐	☐
Clinical managers	☐	☐
Non-clinical managers	☐	☐
Providers	☐	☐
Frontline clinical workers	☐	☐
The appropriate use of standardized clinical protocols was not monitored at this hospital	☐	☐

SECTION H
DOCUMENTATION OF PATIENTS' MEDICAL RECORDS

38 **In 2019 and 2020, what actions were taken at this hospital in response to PROVIDERS' incomplete documentation of patients' medical records?**

Select all that apply	2020	2019
Required provider to meet with hospital senior managers or supervisors	☐	☐
Required provider to meet with compliance office	☐	☐
Required provider to undergo peer review	☐	☐
Required provider to meet with other staff not listed above	☐	☐
Required provider to receive additional training	☐	☐
Provider was reassigned or dismissed	☐	☐
Provider was penalized financially	☐	☐
No actions were taken for providers' incomplete documentation of patients' medical records	☐	☐
There was no issue with providers' incomplete documentation of patients' medical records	☐	☐

39 **In 2019 and 2020, what actions were taken at this hospital to recognize a PROVIDER fully completing their documentation of patients' medical records?**

Select all that apply	2020	2019
This hospital used NON-FINANCIAL incentives for complete documentation of patients' medical records	☐	☐
This hospital used FINANCIAL incentives for complete documentation of patients' medical records	☐	☐
This hospital used NO incentives for complete documentation of patients' medical records, financial or non-financial	☐	☐

REMARKS

CONTACT INFORMATION

Name

Title

Street

City

State

Zip Code -

Area Code and Phone Number - -

Email

THANK YOU FOR COMPLETING THIS SURVEY

Appendix B

MOPS-HP COGNITIVE TESTING METHODOLOGY

1. Background

The U.S. Census Bureau's Statistical Quality Standards requires pretesting with respondents, and the Census Bureau collects and protects the confidentiality of these data under its Title 13 authority. [1,2] Rather than collecting data, the cognitive testing process helps to decide the appropriate survey respondent, to check respondent's interpretation of questions and terminology, and to develop supplemental materials. Supplemental materials include letters to respondents about completing the survey electronically, frequently asked questions, and instructions.

Two survey forms were tested in both rounds, one for chief nursing officers (CNO) and clinical hospital managers and a second for chief financial officers (CFO). CNOs generally oversee clinical areas, while CFOs are responsible for the hospital's financial activities. Table A1 shows the content asked on each form. In round 1, CNOs and middle-level clinical managers[3] were asked thirty-seven questions and CFOs were asked twenty. The questions on teams, staffing, and protocols were tested with CNOs but not CFOs due to their clinical focus. In round 2, questions on medical record documentation were added to the CNO form to test whether they could answer these questions more easily than CFOs.

The MOPS-HP is planned as a mandatory supplement to the 2019 Service Annual Survey (SAS) for approximately 3,100 sampled hospitals' physical locations. The 5-year recall period for cognitive testing purposes was 2017 and 2012 and will be 2019 and 2020 when conducted.[4] This reflects the MOPS recall period for manufacturing establishments and helps support evaluations of changes in management practices over time.

2. Recruiting hospitals and managers

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[1] See Statistical Quality Standard A2 on Developing Data Collection Instruments and Supporting Materials https://www.census.gov/content/dam/Census/about/about-the-bureau/policies_and_notices/quality/statistical-quality-standards/Quality_Standards.pdf.

[2] This research was conducted under generic clearance for questionnaire pretesting (OMB number 0607-0725), which also mandates voluntary participation.

[3] For example, the head of a hospital unit such as surgery.

[4] As noted in the paper, a 1-year recall period was adopted to avoid potential recall issues with 2014 when the MOPS-HP is fielded in 2021.

2.1. Hospitals. The Census Bureau recruited 30 hospitals, with 29 from the private sector and 1 from the government sector, for cognitive testing of the MOPS-HP content. All were general medical and surgical hospitals, which excluded psychiatric and substance abuse hospitals and long-term care hospitals. [5, 6]

Hospitals were recruited using name listings from the Census Bureau's business frame, the American Hospital Association's Directory, and the internet. Stratifying across urban, suburban, and rural areas, tested hospitals were located in the District of Colombia and seven states.[7] Since we did not recruit hospitals west of Texas, we were unable to pick up any differences that may exist with these excluded geographies. Most of the recruited hospitals were exempt from Federal income taxes, many were academically affiliated, and the majority of hospitals belonged to a system, which might include other hospitals and/or health care providers.

2.2. Hospital Respondents. For round 1, the cognitive testing staff recruited eight chief financial officers (CFO) and nine clinical respondents that included primarily chief nursing officers (CNO). Middle-level clinical managers were recruited in round 1 but not round 2, since their schedules made recruitment difficult and their responses could be limited to their individual clinical unit rather than the entire hospital. After the two rounds of cognitive testing, the Census Bureau completed eighteen interviews with CNOs and thirteen with CFOs.[8]

Many of Census Bureau's business surveys are completed by CFOs and/or their financial staff, and CNOs and clinical managers represented new respondents to recruit. Without direct contact information or names of CNOs and clinical managers, the cognitive testing staff often needed to make multiple phone calls and navigate multiple layers of administrative staff. Most clinical respondents were not familiar with other Census Bureau collections on hospitals including the Service Annual Survey, which samples firms or parts of multi-establishment firms. In contrast, the MOPS-HP was tested on hospital establishments, which is the physical location where the business activity takes place. Respondents were more likely to be familiar with the Economic

[5] Long-term care hospitals include those that provide rehabilitative services to physically challenged or disabled individuals.
[6] Based on the North American Industrial Classification System (NAICS), we recruited hospitals under NAICS 6221 and excluded hospitals under NAICS 6222 and 6223.
[7] The seven states were Georgia, Massachusetts, Maryland, Michigan, New Hampshire, Ohio, and Texas.
[8] Two respondents were interviewed from one hospital for a total of 31 interviews at 30 hospitals.

Census conducted every five years on all hospitals establishments, although many were not since the Economic Census is sent to the hospital's financial department and it primarily asks about revenues and expenses.

Table A1. Tested content on MOPS-HP forms for chief nursing officers (CNO)/clinical managers and chief financial officers (CFO)

Section on form	*CNO and middle-level clinical manager form*	*CFO Form*
Tenure	X	X
Management Practices	X	X
Management Training	X	X
Management of Team Interactions	X	
Staffing and Allocation of Human Resources	X	
Standardized Clinical Protocols	X	
Documentation of Medical Records	Added during round 2	X
Organizational Characteristic: Hospital Size	X	X

3. Interviewing and Probing

The cognitive testing interviews lasted approximately one hour depending on the respondent's availability, and Census Bureau staff conducted 18 in person and 13 by telephone. The interviewers asked respondents to sign a consent form for participation and also asked for permission to tape record the interview for use by the Census team. This information is kept confidential.

Interviews began with a brief overview of the proposed MOPS-HP followed by respondents being asked to read a subset of the survey questions before proceeding. The cognitive testing

staff explained that rather than collecting actual responses to the questions, the objective was to ensure that respondents interpreted the question as intended, that the terms were well understood and defined properly, and that no additional response options were necessary.

Probing questions asked respondents to focus on a particular part of the questions such as a term or their interpretation of the question's intent. Sometimes respondents were asked to paraphrase or repeat the question in their own words, which sometimes led to improvements. Respondents were also probed on whether they could respond for the 5-year recall period, and their feedback confirmed they could.

For the final MOPS-HP, responses from managers at the sampled hospital's location in 2019 and 2020 are desired. If the respondent answers the survey's second question indicating they were not working at the hospital in 2019, no subsequent questions ask for 2019 data. During the cognitive testing interviews, respondents were asked what had changed if anything during the 5-year recall period, and their responses are discussed in the paper's final remarks.

4. Findings and Recommendations

These interviews also uncovered items to include with the survey's instructions such as clarifying that respondents are reporting for the hospital at that physical location only and that asking other staff for help answering questions is acceptable (e.g., the hospital's medical director, quality assurance staff). Respondents also confirmed that the mailed survey materials with only a title for the recipient (e.g., chief nursing officer) should reach the correct person. When probed on the need to include the actual name of the CNO on the envelope, the cognitive testing team was advised that high turnover rates made including a CNO's name less relevant and a title would be sufficient.

Cognitive testing revealed that on average, respondents could complete the tested MOPS-HP questions in 30 to 60 minutes (Herrell and Van Horn, 2018). The final proposed content will include a total of 39 questions. Past experience on surveying businesses about their management practices indicates that questions on management practices are relatively quick to answer compared to the need for records-based inquiries to report employment or revenues. Respondents said most questions could be answered without consulting with someone else. The responses on the MOPS-HP are multiple choice except for three questions requiring numeric responses. The

questions requiring numeric responses ask when the respondent started working at the hospital, when the respondent started working as a manager at the hospital, and the number of licensed beds at the hospital. Cognitive testing confirmed respondents could easily provide this information.